

Listing of Claims:

1-30. (Cancelled)

31. (Previously amended) A method for reducing oil segregation in an ANFO explosive composition and using the ANFO explosive composition, comprising:

a) providing an ANFO explosive suitable organic combustible fuel, inorganic oxidizer particles comprising ammonium nitrate particles and a chemical coupling agent having a long chain aliphatic portion and an epoxy group;

b) combining the organic combustible fuel and the chemical coupling agent to produce a liquid mixture and then combining the liquid mixture with the inorganic oxidizer particles to produce a flowable ANFO explosive comprising inorganic oxidizer particles coated with the liquid mixture;

c) placing the flowable ANFO explosive in a borehole; and,

d) maintaining the ANFO explosive as flowable until detonation.

32. (Original) The method as claimed in claim 31 further comprising selecting the chemical coupling agent from the group consisting of an epoxidized oil, an ester derivative of epoxidized oil, and mixtures thereof.

33. (Original) The method as claimed in claim 32 further comprising selecting epoxidized vegetable oil as the chemical coupling agent.

34. (Withdrawn) The method as claimed in claim 32 further comprising selecting epoxidized fish oil as the chemical coupling agent.

35. (Original) The method as claimed in claim 31 further comprising selecting a chemical coupling agent containing a plurality of epoxy groups per molecule of chemical coupling agent.

36. (Original) The method as claimed in claim 31 further comprising selecting a chemical coupling agent having from 4 to 6 epoxy groups per molecule of chemical coupling agent.

37. (Cancelled)

38. (Original) The method as claimed in claim 31 further comprising selecting diesel oil as the organic combustible fuel.

39. (Original) The method as claimed in claim 31 further comprising selecting ammonium nitrate particles having a density above about 0.86 g/cc as the ammonium nitrate particles.

40. (Original) The method as claimed in claim 31 wherein the ammonium nitrate particles substantially comprise particles having diameters in a range of between about 0.5 to about 4 mm.

41. (Previously amended) The method as claimed in claim 31 wherein the ammonium nitrate particles substantially comprise particles having diameters in a range of between about 0.5 to about 1.5 mm.

42. (Original) The method as claimed in claim 31 further comprising selecting ammonium nitrate particles having a density above about 1.00 g/cc as the ammonium nitrate particles.

43. (Original) The method as claimed in claim 31 further comprising selecting a compound having an aliphatic portion with from about 14 to about 18 carbon atoms as the chemical coupling agent.

44. (Original) The method as claimed in claim 31 further comprising combining a sufficient amount of chemical coupling agent in the ANFO explosive composition such that the ANFO explosive composition has an oil separation less than about 1 %.

45. (Cancelled)

46.(withdrawn) The method as claimed in claim 31 wherein step (a) comprises providing the inorganic oxidizer particles and the organic combustible fuel in a weight ratio of about 94 to 6.

47.(Cancelled)

48.(Previously presented) The method as claimed in claim 31 wherein step (a) comprises selecting at least one of fuel oil, heating oil, diesel fuel, jet fuel, kerosene, mineral oil, corn oil, saturated fatty acids and an alcohol as the organic combustible fuel.

49.(Previously presented) The method as claimed in claim 31 wherein step (a) comprises selecting diesel fuel as the organic combustible fuel.

50.(Cancelled)

51.(Previously Amended) The method as claimed in claim 31, wherein when the organic combustible fuel, ammonium nitrate particles, and chemical coupling agent are combined, the epoxy group is in an unopened state.

52.(cancelled)

53.(Previously Presented) The method as claimed in claim 31, further comprising detonating the flowable ANFO explosive.

54.(Previously Presented) The method as claimed in claim 31, wherein step (d) has a duration of between 1 hour and 14 days.

55.(Previously Presented) The method as claimed in claim 31, further comprising storing the flowable ANFO explosive prior to placing the flowable ANFO explosive into the borehole.

56.(Previously Presented) The method as claimed in claim 31, wherein during step (d), the flowable ANFO explosive exhibits an oil separation of less than 1%.